Electronic Version
Stylesheet Version v1.1.1

Claims

[c1] 1. An iontophoretic device for delivering a medicament to treat an affected area of a living subject's body wherein said iontophoretic device is configured for transdermal application, wherein the device comprises:

-a buffering agent associated with a polymeric gel matrix; wherein

-the buffering agent further comprises polymers having pendant carboxylic acid moieties which can maintain pH of the gel matrix from approximately 4.1 to approximately 4.9, and, preferably pH 4.5, for iontophoresis applications;

-a viscosity enhancer associated with the polymeric gel matrix to temporarily store the medicament in the matrix;

-a rehydrating agent associated with the polymeric gel matrix to facilitate homogeneous hydration in the matrix;

-a medicament associated with the polymeric gel matrix; and

- an active electrode assembly associated with the polymeric gel matrix configured for iontophoretically delivering the medicament to the affected area of the

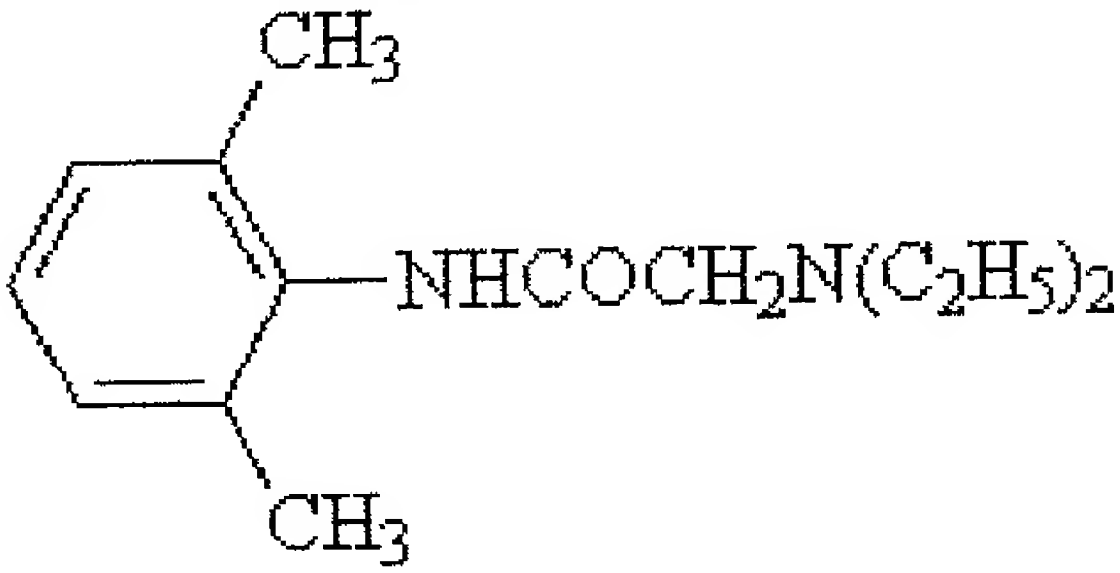
living subject's body.

[c2] 2. The iontophoretic device according to claim 1, wherein the medicament associated with the polymeric gel matrix may be selected from the group consisting of:

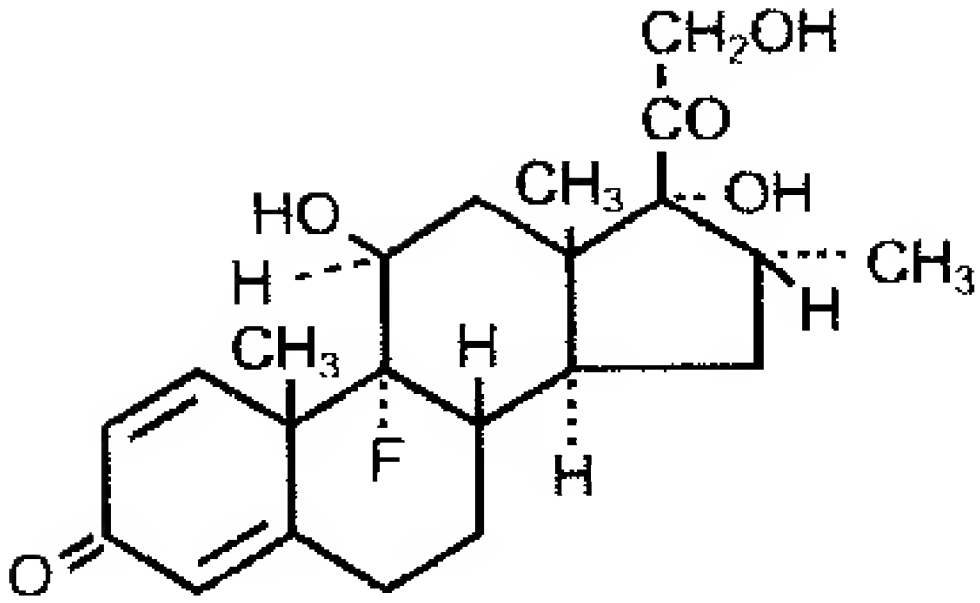
-Dexamethasone; and

-Lidocaine.

[c3] 3. The iontophoretic device according to claim 1, wherein the medicament may be selected from the group consisting of the following chemical structures:



Lidocaine



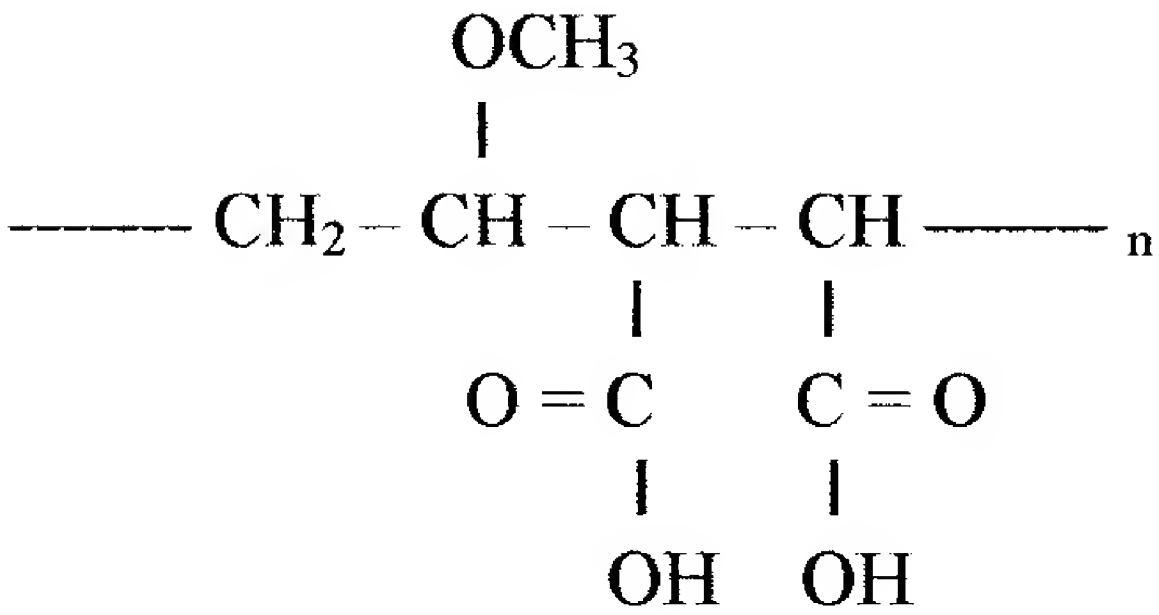
Dexamethasone

[c4] 4. The iontophoretic delivery device according to claim 1, further comprising:

-a counter electrode assembly, wherein the counter electrode assembly is configured for completing an electrical circuit between the active electrode assembly and an energy source; and

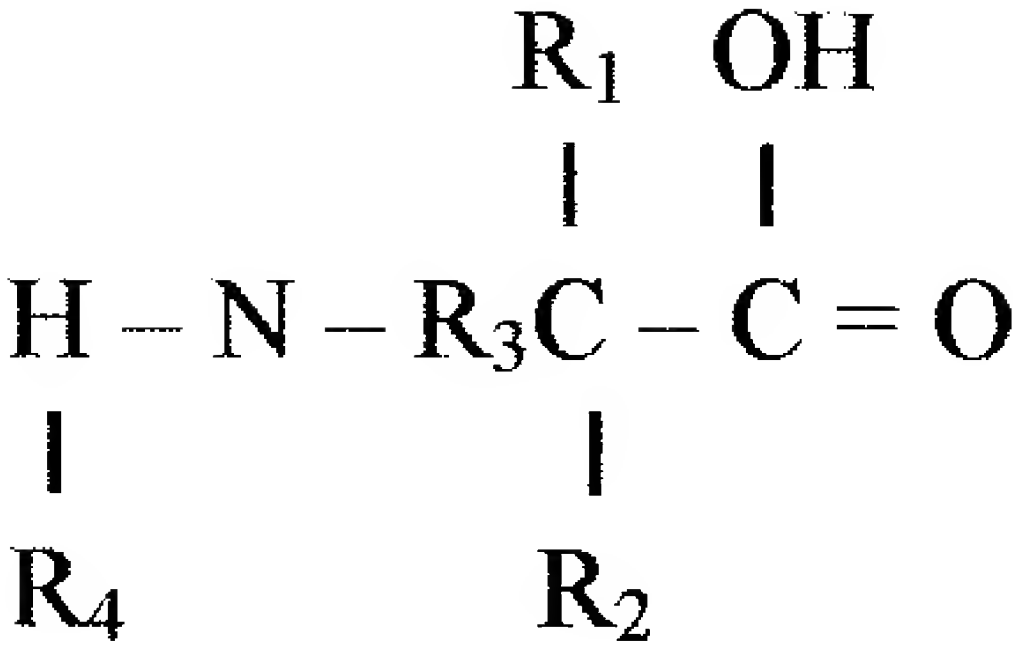
-an energy source for generating an electrical potential difference.

[c5] 5. The iontophoretic device according to claim 1, wherein the buffering agent is any neutralized acrylate polymer having the following structure:



-wherein an effective amount of said polymer maintains the pH above 4.0 and adjust the pH between approximately 4.1 to approximately 4.9, and preferably pH 4.5 for effectively delivering the medicament to treat affected area of a living body's subject.

[c6] 6. The buffering agent according to claim 5, wherein the neutralized acrylate polymer is neutralized with any one of soluble amino acids having the following chemical structure:



-wherein, R1, R2, and R4 are the same or different and comprise H, methyl, ethyl, propyl, butyl, aromatic and combinations thereof; and
-R3 is the same or different and comprises a direct carbon-nitrogen bond, methylene, propylene, butylene, aromatic and combinations thereof.

[c7] 7. The iontophoretic device according to claim 1, wherein the viscosity enhancer capable of temporarily storing the medicament is hydroxy ethyl cellulose.

[c8] 8. The iontophoretic device according to claim 1, wherein the rehydrating agent capable of facilitating hydration of the matrix is a Tween-A20.

[c9] 9. The iontophoretic device according to claim 1, wherein the active electrode assembly includes an open-

faced or high current density electrode.

[c10] 10. A method for treating an affected area of a living subject's body, wherein the method comprises the steps of:

-associating a medicament with a matrix in an iontophoretic delivery device;

-providing an effective amount of pH buffering agents to the matrix;

-attaining high buffer capacity by providing a viscosity enhancer to the matrix;

-adding a rehydration agent to the matrix to facilitate homogeneous hydration within the matrix;

-positioning at least a portion of the iontophoretic device on the affected area of a living subject; and

-iontophoretically delivering the medicament to the affected area of the living subject to minimize skin inflammation.

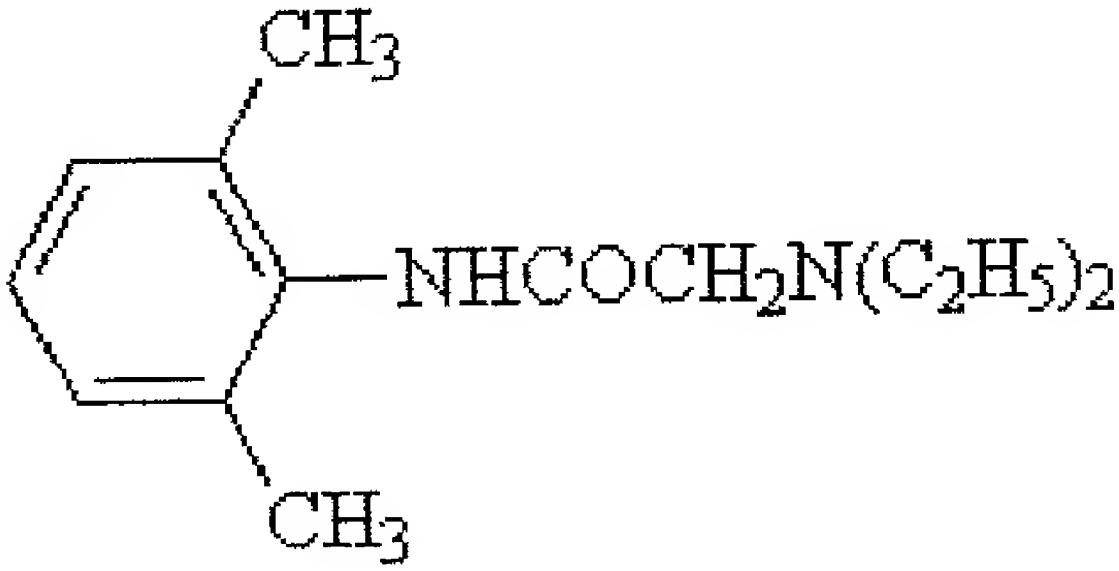
[c11] 11. The method according to claim 10, wherein the matrix configured for iontophoretically delivering the medicament to the affected area of the living subject's body further comprises the steps of:

-means for maintaining a pH above 4.0; and

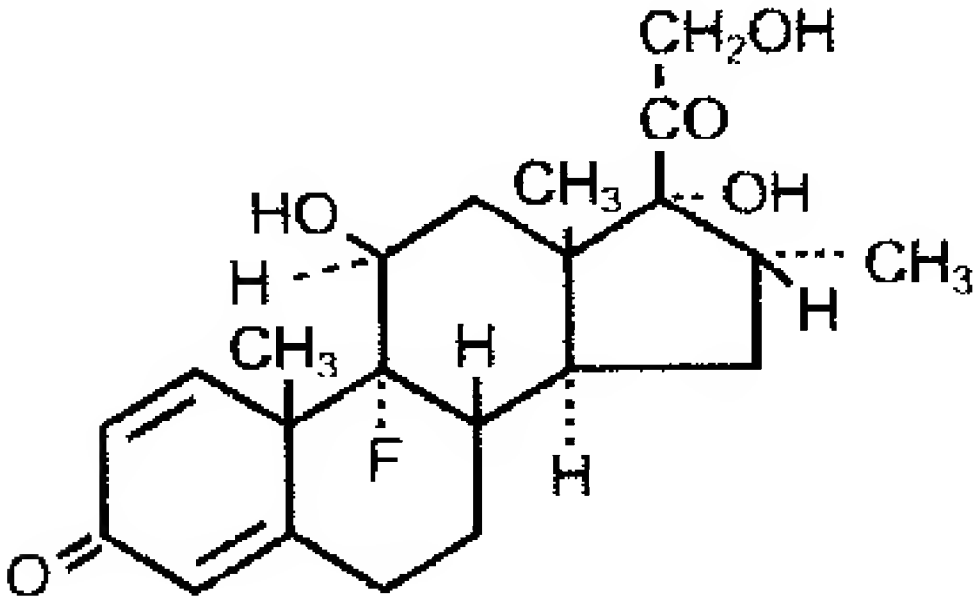
-means for deviating a pH in the ranges from approximately 4.1 to approximately 4.9, and, preferably pH 4.5, for transdermal iontophoretic delivery of

the medicament to the affected area of the limiting subject's body.

[c12] 12. The method according to claim 10, wherein the step of administering a medicament may be selected from the group consisting of the following chemical structures:



Lidocaine



Dexamethasone

[c13] 13. The method according to claim 10, wherein the step of administering a medicament with the living subject includes the step of providing pH buffering agents and any one of amino acids wherein both work in concert to maintain pH above pH 4.0 and assure minimal deviations from a pH of about pH 4.5.

[c14] 14. The method according to claim 10, wherein the step of administering a medicament with the living subject includes the step of providing any one of viscosity enhancers to store the medicament in place of the matrix.

[c15] 15. The method according to claim 10, wherein the step of administering a medicament with the living subject includes the step of providing rehydrating agents to facilitate hydration of the matrix, wherein the rehydrating agent further comprises Waterlock A220.